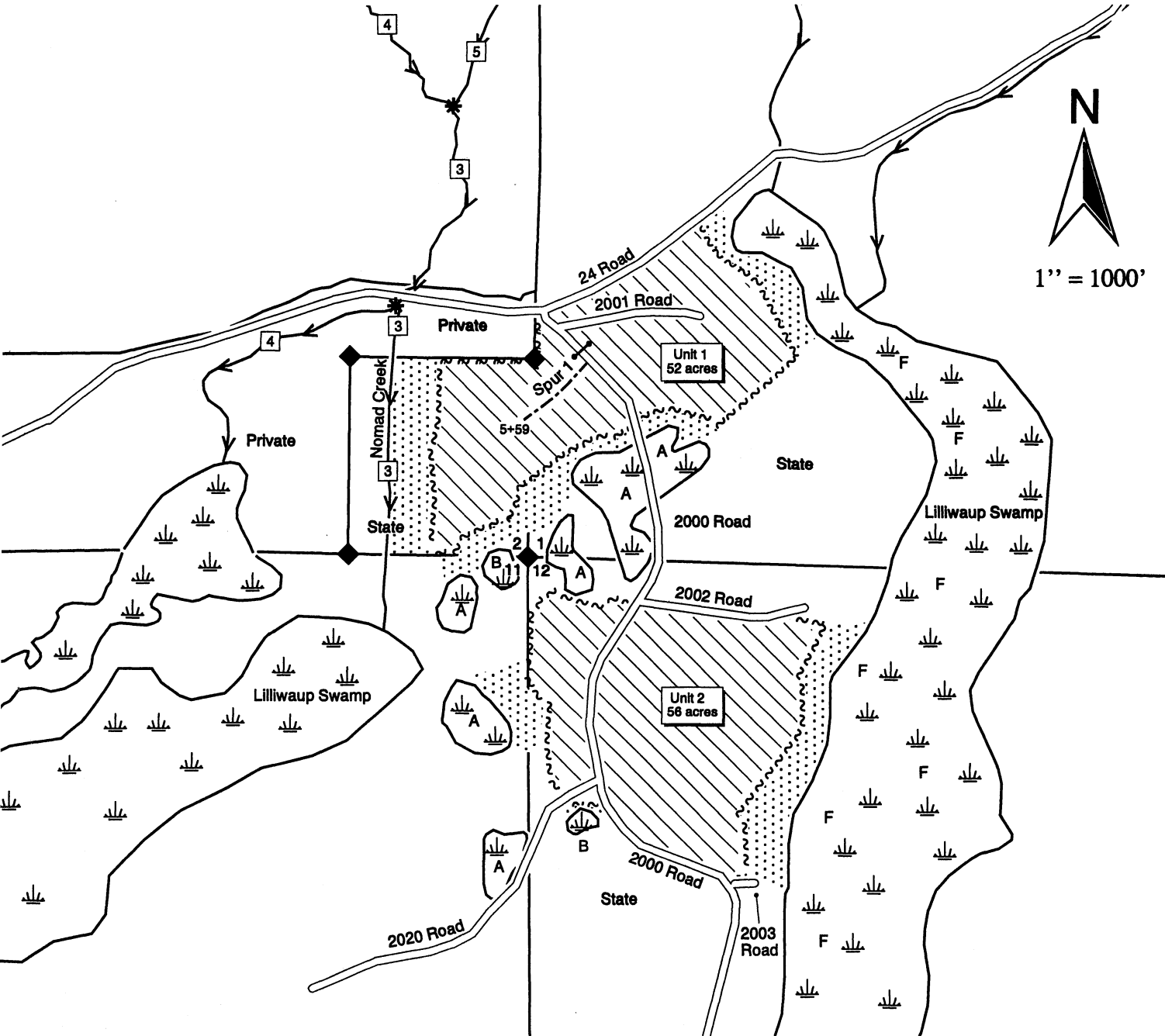


TIMBER SALE MAP

SALE NAME:	CORNER	REGION:	SOUTH PUGET SOUND
AGREEMENT NO:	30-070728	COUNTY(S):	MASON
TRUST(S):	COMMON SCHOOL & C.E.P. & R.I.		

ROAD PLAN PROJECT MAP  
TOWNSHIP 23 NORTH, RANGE 4 WEST, W.M.

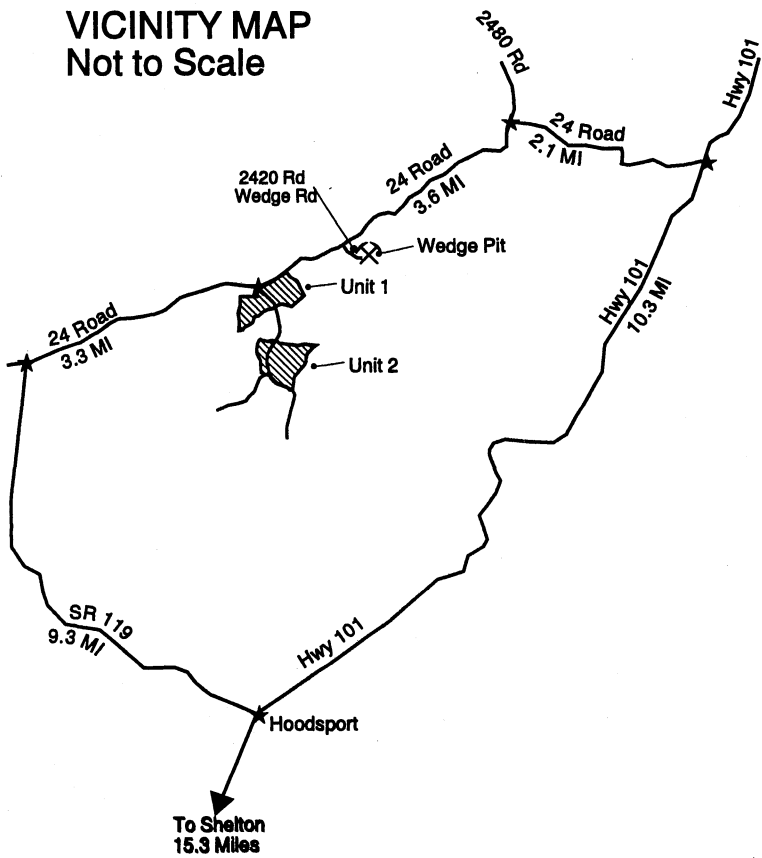


LEGEND

- ~~~~~ White Timber Sale Boundary Tags
- ~~~~~ Property line marked with yellow ribbon
- Ground Based
- RMZ
- Existing Road
- Optional Construction
- Wetlands
- Water Type
- Survey Corner
- Stream
- Water Type Break
- Locked Gate: Master 786

Elevation Range: 500-1,000 feet

VICINITY MAP  
Not to Scale



Drawn By: A. Stuart  
Date: November 3, 2003

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES  
SOUTH PUGET SOUND REGION

CORNER  
ROAD PLAN

SECTIONS 1,2 & 12, TOWNSHIP 23 NORTH, RANGE 04 WEST, W.M.  
MASON COUNTY  
HOODCANAL DISTRICT

AGREEMENT NO.: 30-070728  
DATE: 07 /18/03

STAFF ENGINEER: Heymann  
DRAWN & COMPILED BY: Heymann

SECTION 0 - SCOPE OF PROJECT

This project includes but is not limited to optional construction including:

clearing;  
grubbing;  
right-of-way debris disposal;  
excavation and/or embankment to subgrade;  
landing construction;  
acquisition, manufacture, and application of rock;  
road abandonment.

This project also includes but is not limited to optional reconstruction including:

tank trap removal;  
road deactivation.

SECTION 1 - GENERAL CLAUSES

1.1-1 ROAD PLAN SCOPE

Clauses in this plan apply to all construction, reconstruction or abandonment including landings unless otherwise noted.

1.1-3 OPTIONAL ROADS

Construction or reconstruction of the following roads is not required. Roads used by the Purchaser shall be constructed or reconstructed on the State's location and in accordance with this Road Plan.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
Spur 1	0+00 to 5+59	Construction
2001 RD	0+00 to 0+50	Reconstruction

1.1-4 ROAD PLAN CHANGES

Any departure from this Road Plan including relocation, extension, change in design or additional roads shall be submitted in writing, to the Contract Administrator for consideration, submitted plans must be approved before construction begins.

1.1-5 HIDDEN CONDITIONS

On this plan quantities are minimum acceptable values. Additional quantities required by the State because of hidden conditions or Purchaser's choice of construction season or techniques shall be at the Purchaser's expense. Hidden conditions include, but are not limited to: solid subsurface rock, subsurface springs, saturated ground, and unstable soil.

1.2-1 CONSTRUCTION PERIOD

The construction, reconstruction or rock haul on any of the roads specified herein shall not be permitted when in the opinion of the Contract Administrator, excessive damage may occur, nor shall it be permitted from September 30 to May 1 unless authority to do so is granted, in writing, by the Contract Administrator.

## **1.2-2 HAUL APPROVAL**

Purchaser shall not use roads constructed or reconstructed under this Road Plan for hauling, other than timber cut on the right-of-way, without written approval from the Contract Administrator.

### **1.2.1-1 CONSTRUCTION STEPS**

Pioneering shall not extend past construction that will be completed during the current construction season. Drainage shall be provided on all uncompleted construction as approved, in writing, by the Contract Administrator. Road pioneering operations shall not undercut the final cut slope deposit excavated material outside the clearing limits, or restrict drainage.

Clearing and grubbing shall be completed prior to starting excavation and embankment.

Subgrade shall be completed and are subject to written approval by the Contract Administrator prior to rock application and/or timber haul.

### **1.3-1A CLOSURE TO PREVENT ROAD DAMAGE**

At any time of the year, the hauling of forest products shall not be permitted when in the opinion of the Contract Administrator excessive road damage may occur.

### **1.4-3 R P DAMAGE**

Reference points (R.P.'s) that are moved or damaged at any time during construction shall be reset in their original locations by the Purchaser. Excavation and embankment shall not proceed on road segments controlled by said R.P.'s until all moved or damaged R.P.'s are reset.

### **1.5-1 ROAD MAINTENANCE RESPONSIBILITY**

Maintenance on roads listed in Contract Clauses C-50 (Purchaser Road Maintenance and Repair) and C-60 (Designated Road Maintainer) shall be performed in accordance with Forest Access Road Maintenance Specifications.

### **1.5-3 SNOWPLOWING**

Snowplowing shall not be permitted unless authorized, in writing, by the Contract Administrator.

## **SECTION 3 - GRUBBING**

### **3-2 GRUBBING LIMITS**

Grubbing limits are defined as the entire area between the external limits shown on the TYPICAL SECTION SHEET.

## **SECTION 4 - DEBRIS DISPOSAL AND REMOVAL**

### **4.1-1 DEBRIS DEFINITION**

Right-of-way debris is defined as all nonmerchantable vegetative material larger than one cubic foot in volume ungrubbed within the grubbing limits.

### **4.1-2 DISPOSAL COMPLETION**

All right-of-way debris disposal shall be completed prior to the application of rock and/or timber haul.

### **4.2.3-3 DEBRIS PLACEMENT**

Right-of-way debris shall not be placed against standing timber.

### **4.2.3-4 SCATTERING RIGHT OF WAY DEBRIS**

Right-of-way debris shall be placed outside the grubbing limits.

## **SECTION 5 - EXCAVATION**

### **5.1-1 DEFAULT ROAD DIMENSIONS**

Unless controlled by specific design sheets herein, Roads shall be constructed or reconstructed in accordance with dimensions shown on the TYPICAL SECTION SHEET.

5.1-3 ROAD GRADE AND ALIGNMENT

Road grade and alignment shall conform to the State's marked location. Grade and alignment shall have smooth continuity without abrupt changes in direction. Maximum grades are: 18 percent favorable and 12 percent adverse or as specified on drawings. Minimum radius curve is 60 feet.

5.1-4 CURVE WIDENING

Minimum extra widening on the inside of curves shall be:

5 feet extra	80 to 100 foot radius curve
7 feet extra	60 to 80 foot radius curve

Curve widening, where required, shall be added to the inside of curves.

5.1-7 CONSTRUCTION TOLERANCES

Roads shall be constructed or reconstructed to the dimensions shown on the TYPICAL SECTION SHEET, within the tolerance listed below. Tolerance classes for each road are listed on the TYPICAL SECTION SHEET.

Tolerance Class	A	B	C
Road Width (feet)	+1.5	+1.5	+2.0
Subgrade elevation (feet +/-)	0.5	1.0	2.0
Centerline alignment (feet lt./rt.)	1.0	1.5	3.0

5.1-8 CUT SLOPE RATIO

Excavation (cut) slopes shall be constructed no steeper than shown on the following table:

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Percent</u>
Common Earth (on side slopes less than 55%).....	1:1	100
Common Earth (55% to 70% sideslopes) .....	¾:1	133
Common Earth (on slopes over 70%) .....	½:1	200
Fractured or loose rock .....	½:1	200
Hardpan or solid rock.....	¼:1	400

5.1-9 SHAPING CUT SLOPE

Excavation and embankment slopes shall be constructed to a uniform line and left rough for easier revegetation.

5.1-10 FILL WIDENING

Embankments shall be widened as follows:

<u>Height at Shoulder</u>	<u>Subgrade Widening</u>
Less than 6 feet	2 feet
6 feet or over	4 feet

5.1-11 FILL SLOPE RATIO

Embankment (fill) slopes shall be constructed no steeper than shown on the following table:

<u>Material Type</u>	<u>Embankment Slope Ratio</u>	<u>Percent</u>
Common Earth and Rounded Gravel .....	1½:1	67
Angular Rock .....	1¼:1	80
Sandy Soils. ....	2:1	50

5.1-12 DISPOSAL OF ORGANIC DEBRIS

Organic material shall be excluded from embankment.

5.1-22 PROHIBITED DISPOSAL AREAS

Waste material shall not be deposited within 100 feet of a culvert installation, live stream, Riparian Management Zone, wetland or Wetland Management Zone.

5.1-23 TURNOUTS

Location shall be subject to written approval of the Contract Administrator.

5.1-25 **TURNAROUNDS**

Turnarounds shall be no larger than 30 feet long and 30 feet wide. Location shall be subject to written approval of the Contract Administrator.

5.3-1 **FILL COMPACTION**

All embankment and waste material shall be compacted. The minimum acceptable compaction is achieved by placing embankments in 2 foot or shallower lifts and routing excavation equipment over entire width of the lifts. Side hill embankments too narrow to accommodate excavation equipment may be placed by end-dumping or side casting until sufficiently wide to support the equipment.

5.5-5 **SUBGRADE CROWN**

Finished subgrade shall be crowned or outsloped as shown on the TYPICAL SECTION SHEET, and shall be uniform, firm, rut-free, and shaped to ensure surface runoff in an even, unconcentrated manner.

SECTION 6 - DRAINAGE

6.1-2 **BERM REMOVAL**

Berms shall be removed from shoulders to permit escape of runoff.

SECTION 7 - ROCK

7.1-1 **ROCK SOURCES**

Rock for construction and/or reconstruction under this contract may be obtained from a source on State land as listed below at no charge to the Purchaser. Development and use shall be in accordance with a written "Development Plan" prepared by the State. Upon completion of operations, the rock source shall be left in the condition specified in said plan, subject to approval by the Contract Administrator. Use of material from any other source must have prior written approval from the Contract Administrator. If other operators are using or desire to use this rock source, a joint operating plan shall be developed. All parties shall follow this plan.

<u>Source</u>	<u>Location</u>	<u>Type</u>
Wedge Pit	NE ¼ Sec 1 T23N R04W	4 Inch In Place

7.1-1C **COMMERCIAL SOURCE**

Rock for reconstruction under this contract may be obtained from any commercial source as approved in writing by the Contract Administrator.

7.1-3 **PIT OPERATIONS**

All rock source operations shall be conducted as directed by the Contract Administrator.

7.2.1.1-8 **4 INCH IN PLACE**

"4 INCH IN PLACE" rock shall have a minimum of 90 percent of the top 4 inches of the running surface pass a 4-inch square opening. In place processing such as grid rolling, jaw crushing, or such other method as is demonstrated by the Purchaser to be effective, shall be required if necessary to achieve this requirement.

7.2.1.2-2 **DEBRIS IN ROCK**

Manufactured or Pit run rock shall contain no more than 5 percent by weight of vegetative debris, dirt, or trash.

7.2.4-1 **DRILLING AND SHOOTING SPECIFICATION**

Rock drilling and shooting shall meet the following specifications:

- a. Oversize material remaining in the rock source at the conclusion of the timber sale shall not exceed 5 percent of the total volume mined for the sale.
- b. Oversize material is defined as rock fragments larger than two feet in any dimension.
- c. The Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 10 working days prior to any drilling.

7.4.2-2 SUBGRADE APPROVAL FOR ROCK

Subgrade shall be approved, in writing, by the Contract Administrator prior to application of rock.

7.4.2-8 ROCK SHAPING

Each lift of rock shall be crowned or outsloped as shown on TYPICAL SECTION SHEET, and shall be uniform, firm, rut-free, and shaped to ensure surface runoff in an even, unconcentrated manner.

7.4.3-3 COMPACTION TIMING

Rock shall be spread and compacted using loaded haul trucks concurrently with rock hauling operations.

SECTION 8 - STRUCTURES

8.4-8 GATE CLOSURE

Gates shall be closed and locked when no operation is in progress from September 15 to April 15.

SECTION 9 - ROAD AND LANDING DEACTIVATION

9.1-1 ROAD CLOSURE

If reconstructed the following road shall be deactivated by the Purchaser prior to the termination of this contract.

<u>Road</u>	<u>Stations</u>
2001 RD	0+00 to 0+50

9.1-2

Deactivation shall consist of:  
construction of tank trap barrier in conformance with the attached TANK TRAP DETAIL;  
all work shall be completed as directed by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
2001 RD	0+00 to 0+50

9.2-2 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface as approved by the Contract Administrator.

SECTION 10 - ROAD AND LANDING ABANDONMENT

10.1-1 ABANDONMENT

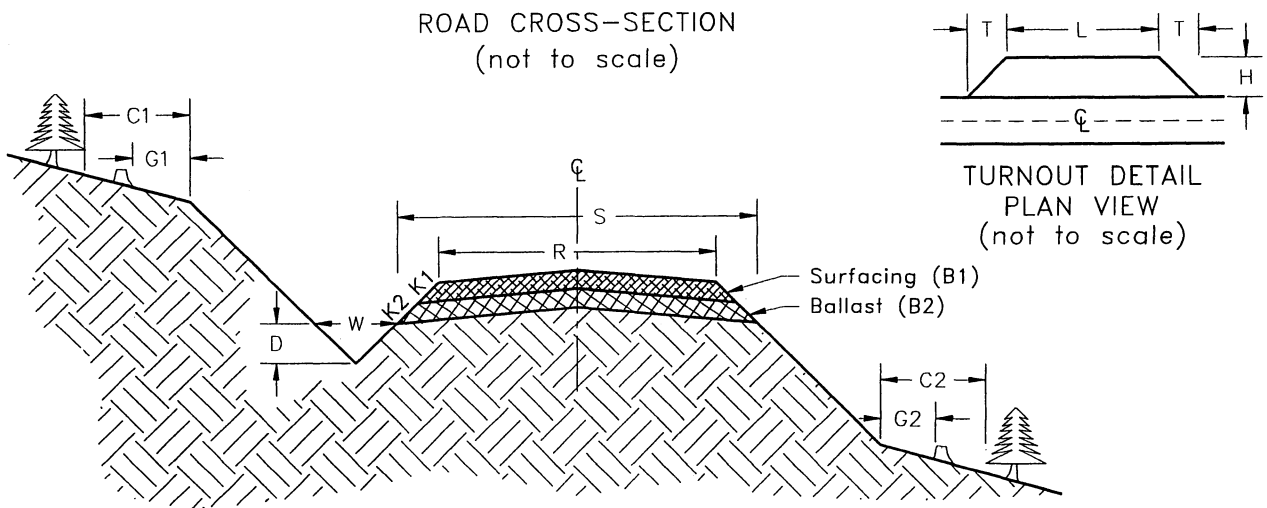
If constructed the following road shall be abandoned by the Purchaser prior to the termination of this contract.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
Spur 1	0+00 to 5+59	Light

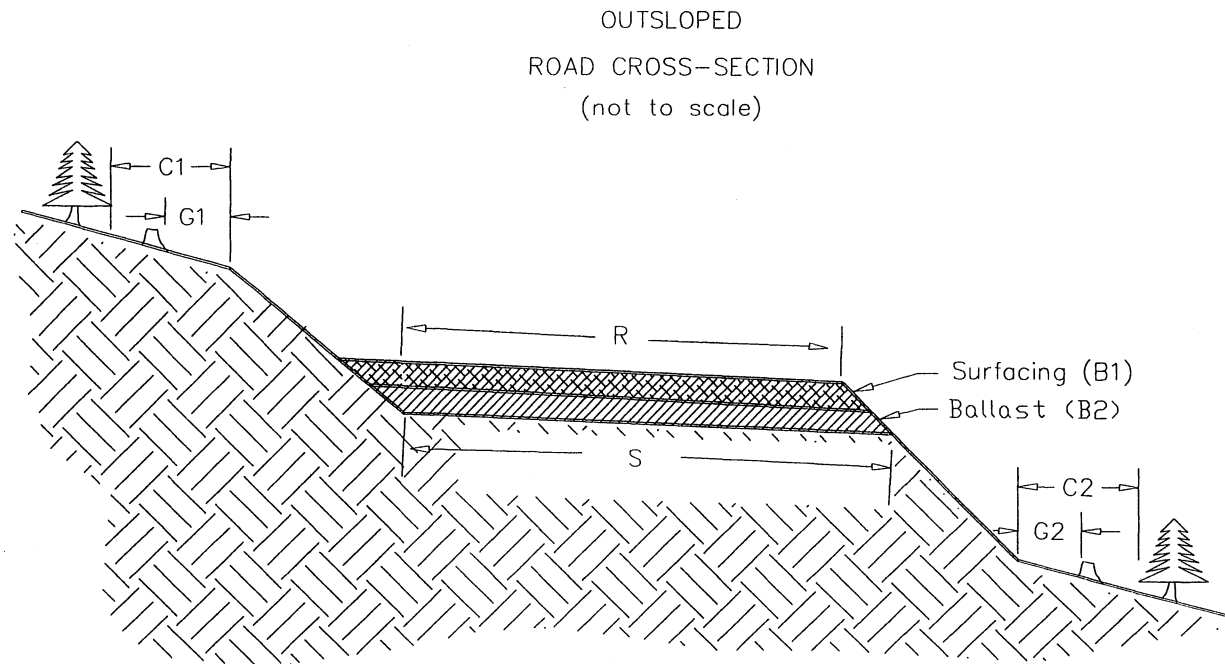
10.1-1A LIGHT ABANDONMENT

Light Abandonment shall consist of:  
construction of tank trap barrier in conformance with the attached TANK TRAP DETAIL;  
ripping the surface to a minimum depth of 18 inches;  
all work shall be completed as directed by the Contract Administrator.

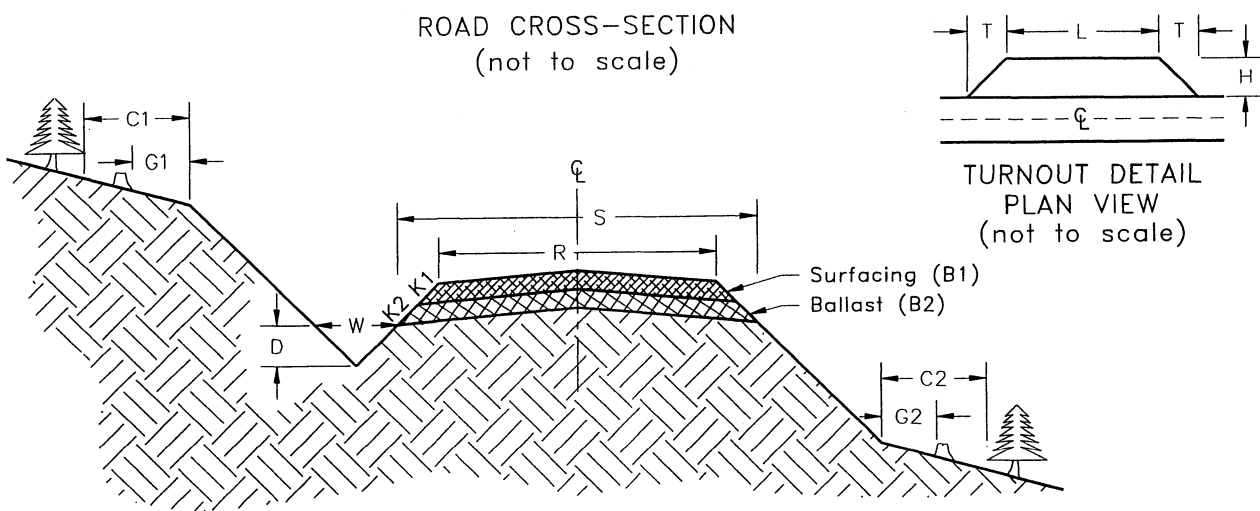
TYPICAL SECTION SHEET



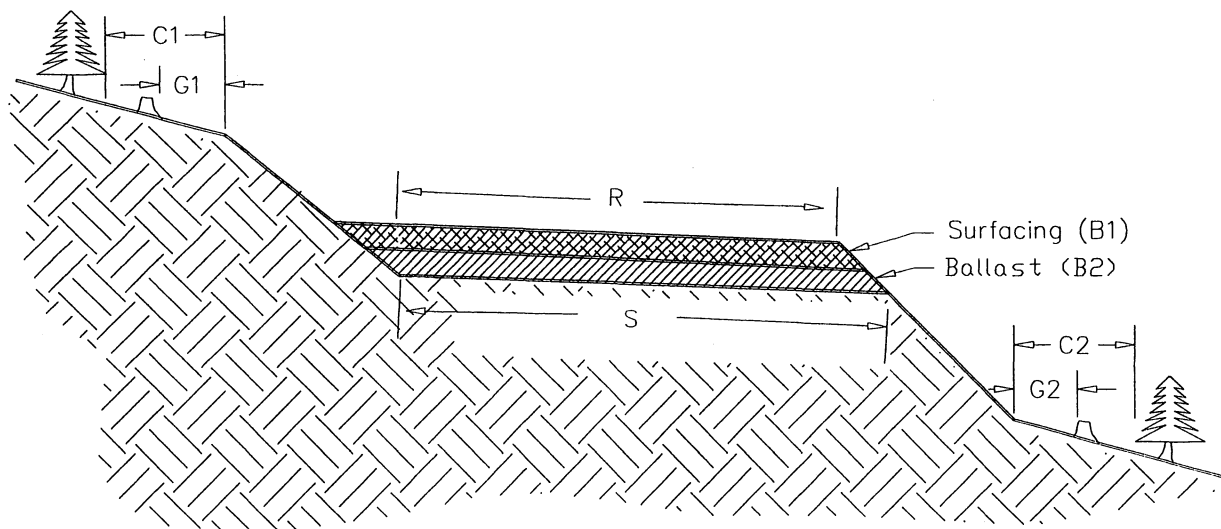
TYPICAL SECTION SHEET



Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch		Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits (feet)		Cut Slope Ratio	Fill Slope Ratio
						Width (feet)	Depth (feet)		G1	G2	C1	C2		
				S	R	W	D						%	%
2001 RD	0+00	0+50	C	15	12	2	1	4	2	2	5	5	100	67
Spur 1	0+00	5+59	C	13	10			Outslope 3%	2	2	5	5	100	67



OUTSLOPED  
ROAD CROSS-SECTION  
(not to scale)



## ROCK LIST

### BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length	Width	Taper
			K2	B2				4 Inch In place	L	H	T
*2001 RD	0+00	0+50	1.5:1	8"	34	0.5	17	Wedge Pit			
*Spur 1	0+00	5+59	1.5:1	8"	28	5.59	157	Wedge Pit			

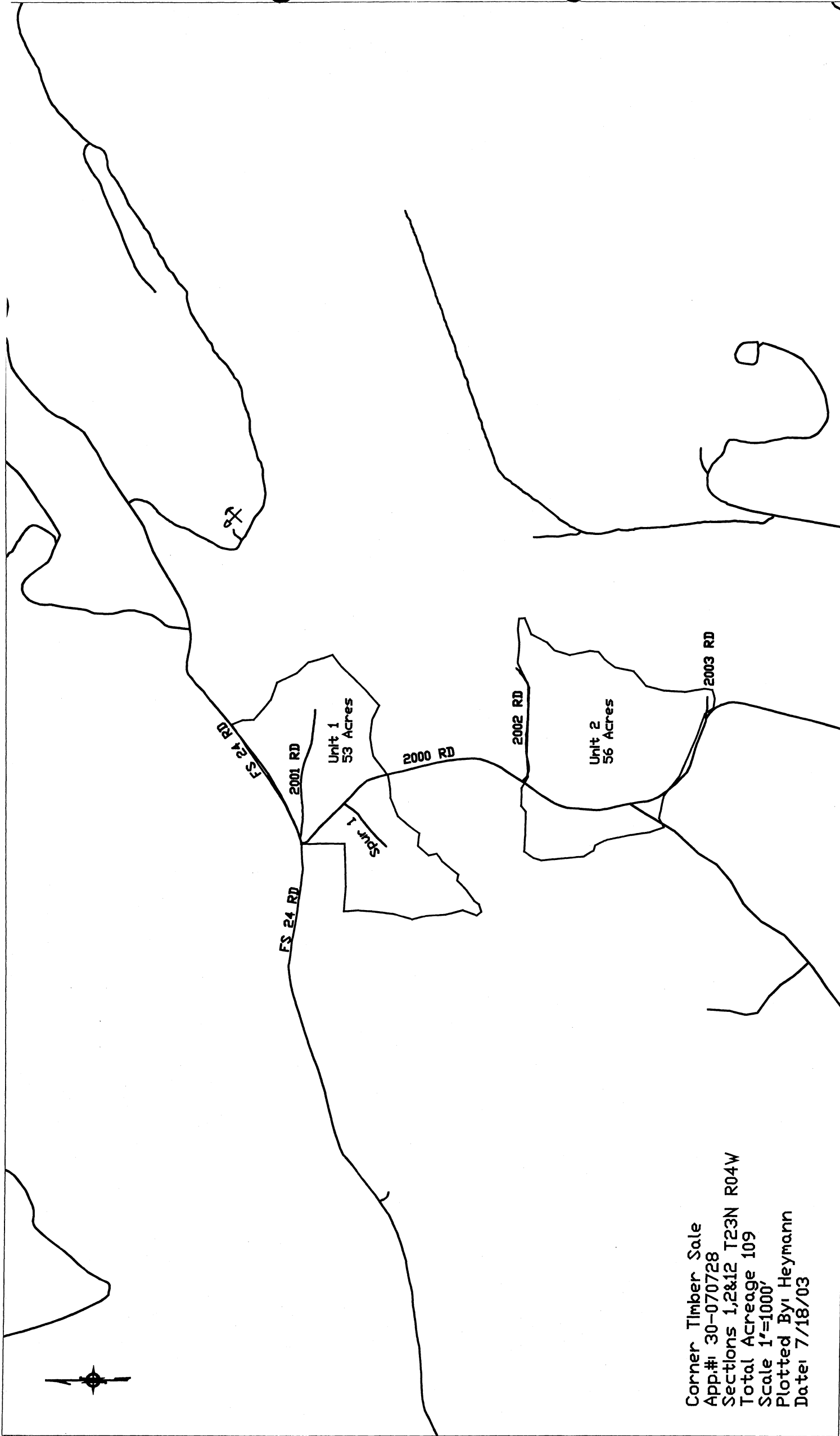
\*Optional rock

BALLAST TOTAL 174 Cubic Yards

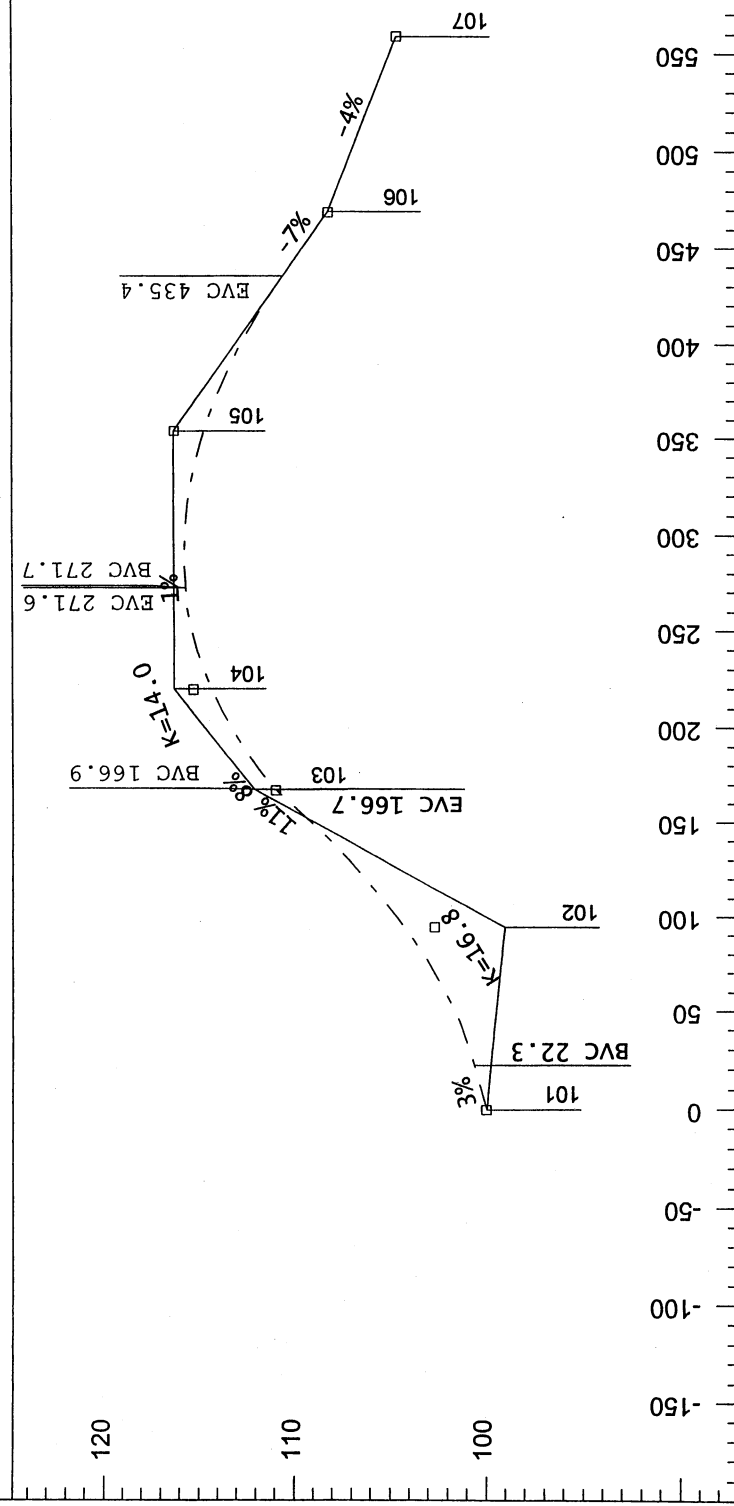
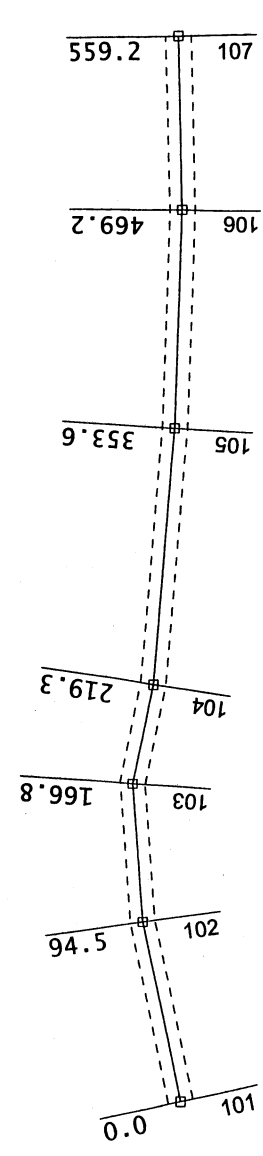
If Purchaser elects to haul on optional rock roads in wet weather, the depth listed above is recommended but not required.

NOTE: Yardages are calculated on a compacted (In-Place) basis.





Corner Timber Sale  
App.# 30-070728  
Sections 1,2&12 T23N R04W  
Total Acreage 109  
Scale 1"=1000'  
Plotted By: Heymann  
Date: 7/18/03



STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

FOREST ACCESS ROAD  
MAINTENANCE SPECIFICATIONS

1. CONSTRUCTION AND RECONSTRUCTION (Prior to acceptance to the contract or acceptance on a timber sale).

A. Cuts and Fills

1. Maintain slope lines as constructed. Remove slides from the ditches and roadway. Replace fills to 1 ½ : 1 slopes with selected material or as directed. Remove overhanging material from the cut slopes.
2. Material from slides or other sources requiring removal shall not be deposited in streams or at locations where it will erode into streams or water courses.
3. Undesirable slide materials and debris shall not be mixed into the surface material.

B. Surface

1. Grade and shape the road surface, turnouts, and shoulders to the original crown, inslope or outslope as directed to provide suitable traveled surface and surface water runoff in an even, unconcentrated manner.
2. Blading must not undercut the backslope at the bottom of the ditchline or cut geotextile at centerline.
3. Watering may be required to control dust and to retain fine surface rock.
4. Desirable surface material shall not be bladed off the roadway.
5. Replace surface material lost or worn away.
6. Remove berms except as directed by the State.
7. Barrel spread soft spots to prevent degradation of geotextile.

C. Drainage

1. Keep ditches and drainage channels at outlets and inlets of culverts clear of obstructions and functioning as intended.
2. Inspect and clean culverts at least monthly, with additional inspections during storms and periods of high runoff. This must be done even during periods of inactivity.
3. Add stable material at the outlet end of the culvert as needed to stabilize the stream bed.
4. Headwalls: maintain to the road shoulder level with material that will resist erosion.
5. Keep silt bearing surface runoff from getting into live streams.

D. Structures

Repair bridges, culverts, cattleguards, fences, and other road structures to the condition required by the construction specifications.

E. Termination of Use or End of Season

Do maintenance work to minimize damage from the elements such as blading to insure correct runoff, ditch, and culvert cleaning and water bars.

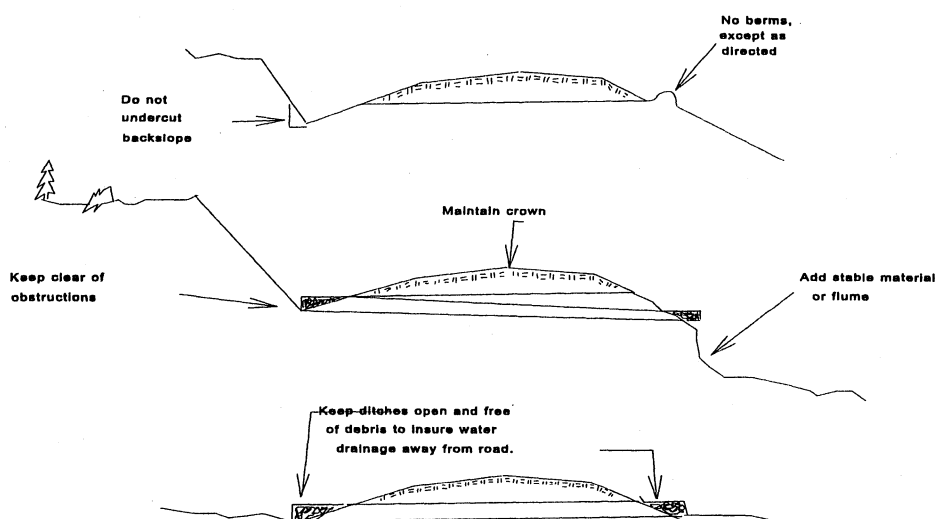
F. Debris

Remove fallen timber, limbs, and stumps from the slopes or roadway.

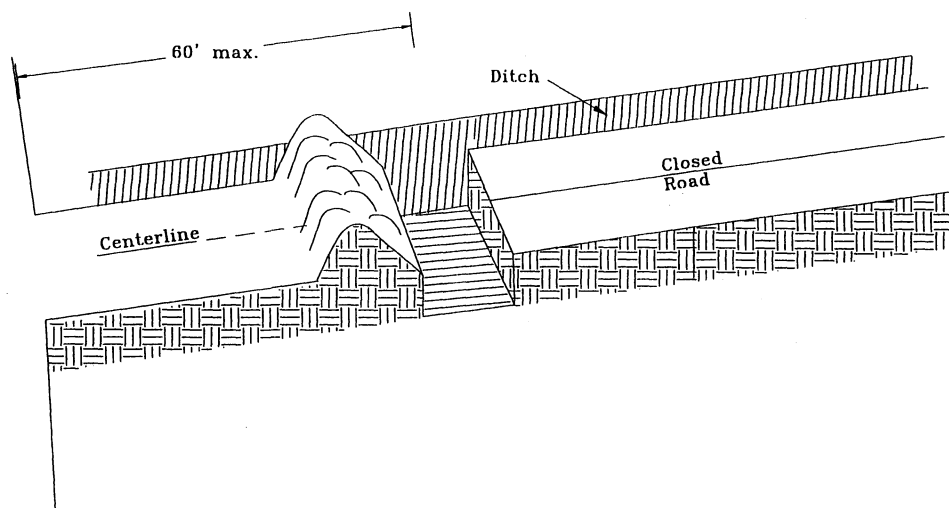
2. Existing Roads – Timber Sale, Operator Maintained

- A. Same as above but not to exceed the condition of the road on the date the contract was signed.

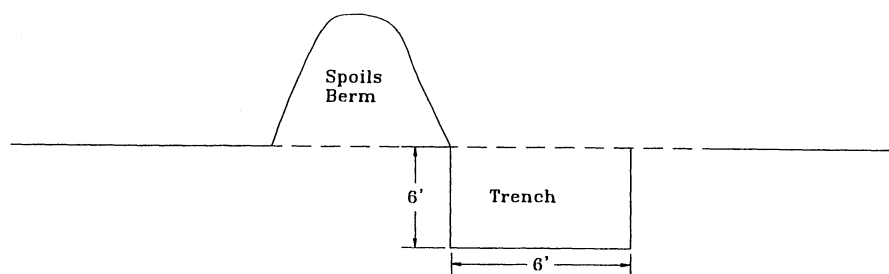
3. A.R.R.F. – Directed maintenance to comply with these specifications.



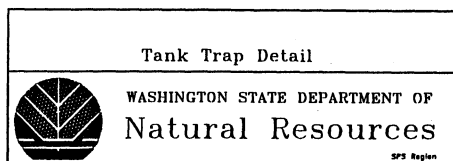
# Single Tank Trap Detail



## Cross Section at Centerline



Scale : None  
Drawn by: M.A.D.



Legal Description: NE ¼ Sec 1 T23N R04W

Rock Pit Name: Wedge Pit

PIT DEVELOPMENT AND RECLAMATION PLAN

- 1. Scatter debris as directed by the Contract Administrator.
- 2. A minimum stripping width of 10 feet must be maintained from all pit faces and at the termination of operations pit shall be left in said condition.
- 3. Pile all reject rock and overburden away from pit working area as directed by the Contract Administrator.
- 4. Pit floor shall be sloped to allow drainage as shown. No ponding will be allowed.
- 5. Maximum face height will be no greater than what can be reached by the excavating equipment.
- 6. At the termination of use the pit face shall have a maximum backslope of 1:1.
- 7. Quantity and Quality of ballast pit is not guaranteed by the State.

